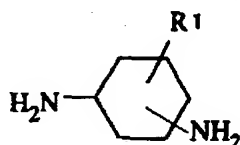


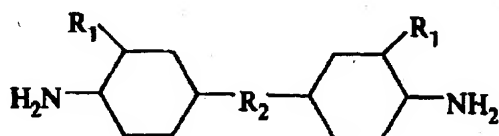
## CLAIMS

We claim:

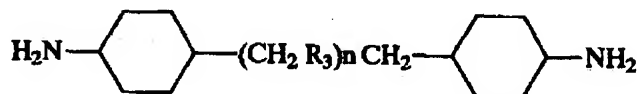
1. A curable epoxy resin composition, which comprises (a) a polyepoxide having  
 5 two or more oxirane rings per molecule, which is optionally mixed with a monoepoxide  
 having one oxirane ring per molecule; and (b) a ketimine as a curing agent which is a  
 condensation reaction product of (1) an amine having two or more primary amino groups  
 directly bonded to a cyclohexane ring and represented by the following general formulae



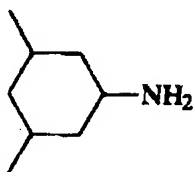
10 or



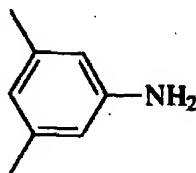
wherein  $\text{R}_1$  is a hydrogen atom or a methyl group or an ethyl group,  $\text{R}_2$  is a group of -  
 $\text{CH}_2$ -, -O- or  $-\text{SO}_2$ - or



15 wherein  $\text{R}_3$  is



or



and  $n$  is an integer of 1-4 and (2) an aliphatic ketone.

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2. The curable epoxy resin composition of claim 1 wherein the ketimine is a condensation reaction product of an aliphatic ketone with 1,2-diaminocyclohexane, 1,3-diaminocyclohexane, 1,4-diaminocyclohexane, 1,2-diamino-4-methylcyclohexane, 1,3-diamino-5-methylcyclohexane, 1,4-diamino-2-methylcyclohexane, 1,2-diamino-4-ethylcyclohexane, 1,3-diamino-5-ethylcyclohexane, 1,4-diamino-2-ethylcyclohexane, bis(4-aminocyclohexyl)methane, bis(4-aminocyclohexyl)ether, bis(4-aminocyclohexyl)sulfone, bis(3-methyl-4-aminocyclohexyl)methane, bis(3-ethyl-4-aminocyclohexyl)methane, bis(3-methyl-4-aminocyclohexyl)ether, bis(3-ethyl-4-aminocyclohexyl)ether, bis(3-methyl-4-aminocyclohexyl)sulfone, bis(3-ethyl-4-aminocyclohexyl)sulfone, or an amine obtained by hydrogenation of an oligocondensate of aniline with formaldehyde.

3. The curable epoxy resin composition of claim 1 wherein the ketimine is a condensation reaction product of an aliphatic ketone with an amine having two or more primary amino groups directly bonded to a cyclohexane ring, the aliphatic ketone being 2-propanone, 2-butanone, 3-methyl-2-butanone, 3,3-dimethyl-2-butanone, 2-pentanone, 3-pentanone, 2-methyl-3-pentanone, 3-methyl-2-pentanone, 4-methyl-2-pentanone, 4-methyl-3-pentanone, 2,4-dimethyl-3-pentanone, 2-hexanone, 3-hexanone, 5-methyl-2-hexanone, 2-heptanone, 3-heptanone, 4-heptanone, 2-octanone or 3-octanone.

4. The curable epoxy resin composition of claim 1 wherein the ketimine is a condensation reaction product of an aliphatic ketone with 1,2-diaminocyclohexane, 1,3-diaminocyclohexane, 1,4-diaminocyclohexane, bis(4-aminocyclohexyl)methane, bis(3-methyl-4-aminocyclohexyl)methane or a polyamine obtained by hydrogenation of an oligocondensate of aniline with formaldehyde.

5. The curable epoxy resin composition of claim 1 wherein the ketimine is a condensation reaction product of an aliphatic ketone with an amine having two or more primary amino groups directly bonded to a cyclohexane ring, the aliphatic ketone being 2-butanone, 3,3-dimethyl-2-butanone, 2-pentanone, 3-pentanone, 2-methyl-3-pentanone, 2,4-dimethyl-3-pentanone or 5-methyl-2-hexanone.

6. The curable epoxy resin composition of claim 1 wherein the ketimine is a condensation reaction product of 4-methyl-2-pentanone with an amine having two or more primary amino groups directly bonded to a cyclohexane ring.

7. The curable epoxy resin composition claim 1 wherein the polyepoxide is a polyepoxide of glycidyl ether, glycidyl ether ester, glycidyl ester, glycidyl amine, glycidylaminoglycidyl ether, glycidylaminoglycidyl ester or epoxidized polyolefin type.

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8. The curable epoxy resin composition of claim 1 wherein the polyepoxide is a glycidyl ether obtained by reacting a bisphenol-type compound with epichlorohydrin, the bisphenol-type compound being bisphenol A, bisphenol F, bisphenol S, tetrabromobisphenol A, bisphenol hexafluoroacetone, tetramethylbisphenol A, tetramethylbisphenol F, tetrahydrobisphenol F, hexahydrobisphenol A, hydrogenated bisphenol A or hydrogenated bisphenol F with epichlorohydrin;

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a glycidyl ether obtained by reacting a novolak-type compound of phenol novolak, cresol novolak, ethylphenol novolak, propylphenol novolak, butylphenol novolak, pentylphenol novolak, octylphenol novolak or nonylphenol novolak with epichlorohydrin;

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a glycidyl ether obtained by reacting a polyhydric phenol of catechol, resorsine, trihydroxybiphenyl, dihydroxybenzophenone, bisresorsinol, hydroquinone, tris(hydroxyphenyl)methane, tetrakis(hydroxyphenyl)ethane or bixylenol with epichlorohydrin; or

a polyglycidyl ether obtained by reacting an aliphatic polyhydric alcohol of glycerol, neopentyl alcohol, ethylene glycol, propylene glycol, tetramethylene glycol, hexylene glycol, polyethylene glycol or polypropylene glycol with epichlorohydrin.

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9. The curable epoxy resin composition of claim 7 wherein the polyepoxide of glycidyl ether type is a polyglycidyl ether obtained by reacting a polyhydric hydroxy compound of bisphenol A, bisphenol F, phenol novolak, cresol novolak, octylphenol novolak or nonylphenyl novolak with epichlorohydrin; or a polyglycidyl ether obtained by reacting an aliphatic polyhydric alcohol of ethylene glycol, propylene glycol, tetramethylene glycol, neopentyl glycol, hexylene glycol, polyethylene glycol or polypropylene glycol with epichlorohydrin.

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10. The curable epoxy resin composition of claim 7 wherein the polyepoxide of glycidyl ether ester type is a polyglycidyl ether ester obtained by reacting a hydroxycarboxylic acid of p-oxybenzoic acid or  $\beta$ -oxynaphthoic acid with epichlorohydrin.

11. The curable epoxy resin composition of claim 7 wherein the polyepoxide of glycidyl ester type is a polyglycidyl ester obtained by reacting a polycarboxylic acid of phthalic acid, methylphthalic acid, isophthalic acid, terephthalic acid, tetrahydrophthalic acid, hexahydrophthalic acid, endomethylenetetrahydrophthalic acid,  
 5 endomethylenehexahydrophthalic acid, trimellitic acid, a dimer acid or a polymerized aliphatic acid with epichlorohydrin.

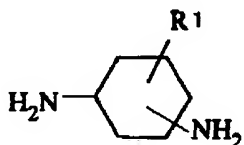
12. The curable epoxy resin composition of claim 7 wherein the polyepoxide of glycidylaminoglycidyl ether type is a glycidylaminoglycidyl ether obtained by reacting  
 10 aminophenol or an aminoalkylphenol with epichlorohydrin.

13. The curable epoxy resin composition of claim 7 wherein the polyepoxide of glycidylaminoglycidyl ester type is a glycidylaminoglycidyl ester obtained by reacting an aminobenzoic acid with epichlorohydrin.

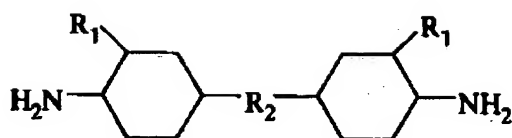
14. The curable epoxy resin composition of claim 7 wherein the polyepoxide of glycidylamine type is a polyglycidylamine obtained by reacting an amino compound of aniline, toluidine, 2,4,6-tribromoaniline, m-xylylenediamine, 1,2-diaminocyclohexane, 1,3-diaminocyclohexane, 1,4-diaminocyclohexane, 4,4-diaminodiphenyl ether, 4,4-  
 20 diaminodiphenylmethane, 4,4-diaminodiphenylsulfone, hydantoin, an alkylhydantoin or cyanuric acid with epichlorohydrin.

15. The curable epoxy resin composition of claim 7 wherein the polyepoxide of epoxidized olefin type is an epoxidized polyolefin obtained by epoxidation of an alicyclic polyolefin or an aliphatic polyolefin.

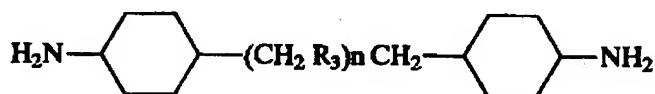
16. A ketimine which is the condensation reaction product of (1) an amine having two or more primary amino groups directly bonded to a cyclohexane ring and represented by the following general formulae



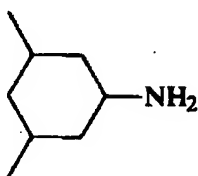
or



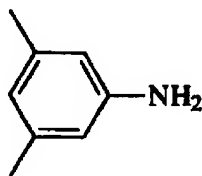
wherein  $R_1$  is a hydrogen atom or a methyl group or an ethyl group,  $R_2$  is a group of  $-CH_2-$ ,  $-O-$  or  $-SO_2-$  or



5 wherein  $R_3$  is



or



and  $n$  is an integer of 1-4 and (2) an aliphatic ketone.

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17. The ketimine of Claim 16 in which the amine is 1,2-diaminocyclohexane, 1,3-diaminocyclohexane, 1,4-diaminocyclohexane, 1,2-diamino-4-methylcyclohexane, 1,3-diamino-5-methylcyclohexane, 1,4-diamino-2-methylcyclohexane, 1,2-diamino-4-ethylcyclohexane, 1,3-diamino-5-ethylcyclohexane, 1,4-diamino-2-ethylcyclohexane,
- 15 bis(4-aminocyclohexyl)methane, bis(4-aminocyclohexyl)ether, bis(4-aminocyclohexyl)sulfone, bis(3-methyl-4-aminocyclohexyl)methane, bis(3-ethyl-4-aminocyclohexyl)methane, bis(3-methyl-4-aminocyclohexyl)ether, bis(3-ethyl-4-aminocyclohexyl)ether, bis(3-methyl-4-aminocyclohexyl)sulfone, bis(3-ethyl-4-aminocyclohexyl)sulfone, or an amine obtained by hydrogenation of an oligocondensate of aniline with formaldehyde
- 20 and the ketone is 2-propanone, 2-butanone, 3-methyl-2-butanone, 3,3-dimethyl-2-butanone, 2-pentanone, 3-pentanone, 2-methyl-3-pentanone, 3-methyl-2-pentanone, 4-methyl-2-pentanone, 4-methyl-3-pentanone, 2,4-dimethyl-3-pentanone, 2-hexanone, 3-

hexanone, 5-methyl-2-hexanone, 2-heptanone, 3-heptanone, 4-heptanone, 2-octanone or 3-octanone.

5        18. The ketimine of Claim 16 in which the amine is 1,2-diaminocyclohexane, 1,3-diaminocyclohexane, 1,4-diaminocyclohexane, bis(4-aminocyclohexyl)methane, bis(3-methyl-4-aminocyclohexyl)methane or a polyamine obtained by hydrogenation of an oligocondensate of aniline with formaldehyde.

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20. The ketimine of Claim 18 in which the ketone is 4-methyl-2-pentanone.

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